

AMENDMENTS TO THE CLAIMS

1-16 (Canceled)

17. (Currently Amended) The system of Claim 31, further comprising a heater configured to heat said exposed surface to a temperature close to a marking threshold of the exposed surface prior to the exposed surface being exposed to the laser light.

18. (Previously Presented) The system of Claim 17, further comprising drive electronics and a heat exchanger, wherein at least one of said array of lasers and said drive electronics generates heat and said heat exchanger transfers the heat generated to the exposed surface.

19. (Previously Presented) The system of Claim 17, wherein the heater comprises a light emitter.

20. (Currently Amended) The system of Claim 31, comprising another light emitter positioned adjacent to said laser array and adapted to supply sufficient light so as to bring said ~~substrate~~ paper close to a marking threshold, wherein while said array of lasers emits light, and the exposed surface passes the marking threshold due to the combined effect of said laser array and said other light emitter.

21. (Previously Presented) The system of Claim 20, wherein said light emitter emits light to said exposed surface at a point substantially coincident with the point of light from the laser light emitting source.

22. (Canceled)

23. (Currently Amended) The system of Claim 31, wherein ~~at least one optical element~~ an array of micro lenses is located between said lasers and a plurality of distinct points on said paper. ~~said substrate.~~

24. (Currently Amended) The system of ~~Claim 23~~ Claim 31, wherein at least one optical element is located between said lasers and said paper, said at least one optical element ~~incorporates~~ incorporating at least one of ~~a single bulk lens, an array of micro lenses,~~ a wave guide, a graded-index lens, and a diffractive optical element, ~~and a reflector.~~

25. (Previously Presented) The system of Claim 31, further comprising a plurality of radiation outputs and means for switching the path of radiation to selected outputs.

26. (Previously Presented) The system of Claim 31, further comprising means for directing the radiation in a plurality of directions.

27. (Previously Presented) The system of Claim 25, further comprising at least one of a mechanically displaceable optical element, an electronically switchable diffractive element, and a branched wave guide.

28. (Previously Presented) The system of Claim 26, further comprising at least one of a mechanically displaceable optical element, an electronically switchable diffractive element, and a branched wave guide.

29. (Previously Presented) The system of Claim 31, wherein each of the array lasers is configured to be pulsed.

30. (Canceled)

31. (Currently Amended) A laser marking system configured to mark paper, a ~~substrate~~, the system comprising:

a laser light emitting source;

~~a substrate formed of at least one of paper, a sheet form, synthetic paper and resin film;~~

means for displacing said ~~substrate~~paper relative to said laser light emitting source, wherein the displacing means is configured to expose a surface of the ~~substrate~~paper to light from the laser light emitting source, and the exposed surface is sufficiently sensitive to light from the laser light emitting source that, when exposed, energy is absorbed at at least one point of said ~~substrate~~paper; whereby a reaction occurs which changes the color of the exposed surface and said ~~substrate~~paper is the printed product of said laser marking system; and

means for transmitting light from said laser light emitting source to the exposed surface,

wherein said laser light emitting source comprises an array of individually addressable lasers arranged for simultaneous ~~multi-point~~ marking of a plurality of distinct points of said exposed surface, and said array of lasers comprise semi-conductor laser diodes configured to emit light in at least one of the infra red and near infra red spectrums, said paper being sensitive to light of at least one of the infra red and near infra

red spectrums, whereby said paper is colored primarily by thermal reactions caused by exposure of the plurality of distinct points to the emitted light; and

means for modulating at least one of a duration and an amplitude of the emitted light in order to affect the extent of color change.

32. (Currently Amended) A laser marking system configured to mark a ~~substrate~~paper, the system comprising:

a laser light emitting source;

~~a substrate formed of at least one of paper, a sheet form, synthetic paper and resin film;~~

a moving component configured to displace the ~~substrate~~paper relative to said laser light emitting source, wherein the moving component is configured to expose a surface of the ~~substrate~~paper to light from the laser light emitting source, and the exposed surface is sufficiently sensitive to light from the laser light emitting source that, when exposed, energy is absorbed at least one point of said ~~papers~~substrate; whereby a reaction occurs which changes the color of the exposed surface and said ~~paper~~substrate is the printed product of said laser marking system; and

an optical element configured to transmit light from said laser light emitting source to the exposed surface,

wherein said laser light emitting source comprises an array of individually addressable lasers arranged for simultaneous ~~multi-point~~ marking of a plurality of distinct points of said exposed surface, and said array of lasers comprises semi-conductor laser diodes configured to emit light in at least one of the infra red and near infra red spectrums, said paper being sensitive to light of at least one of the infra red and near infra red spectrums, whereby said paper is colored primarily by thermal reactions caused by exposure of the plurality of distinct points to the emitted light; and

a light modulator configured to modulate at least one of a duration and an amplitude of the emitted light in order to affect the extent of color change.

33. (Canceled)

34. (Currently Amended) The system of claim 17, wherein said heater is a pre-heating bar covering the width of the ~~substrate~~paper.

35. (Currently Amended) The system of claim 31, further comprising optical biasing means, comprising a secondary uniform light source which upon actuation shines onto the ~~substrate~~paper, achieving an optical density just below the marking threshold.

36. (Currently Amended) The system of claim 35, wherein the optical biasing means further acts to heat the ~~substrate~~paper prior to marking.